Algebra 2 TEST 2.1 Review

I. Find the values of  and  that minimize or maximize the objective functions for each feasible region. Also find the value of the maximum or minimum.

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| 1. Identify the vertices, then **maximize**  Vertices: Max is \_\_\_\_\_\_At  | 2. Identify the vertices, then **minimize** Vertices: Min is \_\_\_\_\_\_At  |

Graph each system of restrictions.

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| 3.   | 4.   |
| 5. Watch the scales on each axis! 7List the restrictions for the following graph.  |
| 6. A gold processor has two sources of gold ore, source A and source B. In order to keep his plant running, at least three tons of ore must be processed each day. Ore from source A costs $20 per ton to process, and ore from source B costs $10 per ton to process. Costs must be kept to less than $80 per day. Moreover, Federal Regulations require that the amount of ore from source B cannot exceed twice the amount of ore from source A. If ore from source A yields 2 oz. of gold per ton, and ore from source B yields 3 oz. of gold per ton, how many tons of ore from both sources must be processed each day to maximize the amount of gold extracted subject to the above constraints? |

State the dimensions and identify the indicated element of each matrix.

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| 7. ;  | 8. ;  | 9. ;  |
| 10. Use the equivalent matrices to solve for each variables.  | 11. a) Rewrite the data from the table in a matrix where the years are the rows and the categories are the columns.

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| **Unemployment Rates** |
|  | June 1992 | June 1996 |
| Construction | 17.6% | 9.5% |
| Manufacturing | 8.3% | 5.1% |
| Transportation | 5.4% | 4.5% |
| Sales | 8.7% | 6.4% |
| Finance | 4.0% | 2.6% |
| Services | 6.6% | 5.1% |
| Government | 3.5% | 2.7% |

(b) Identify  and what it represents.(c) Identify  and what it represents. |

Solve each matrix..

|  |  |
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| 12.   | 13.  |

Use the provided matrices to find the following, if possible. You may use your graphing calculator.

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| 14.  | 15.  | 16.  | 17.  | 18.  |
| 19.  | 20.  | 21.  | 22. B - C | 23. 2A - C |

Use a calculator to find the inverse of each matrix, if it exists.

|  |  |
| --- | --- |
| 24.  | 25.  |

Solve for matrix .

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| 26.  | 27.  |
| 28. Write as a matrix equation. Then solve by inverse matrices.  | 29. Write as a matrix equation. Then solve by inverse matrices.  |
| 30. Write a system of equations, then write a matrix equation to solve.On Monday, Mr. Graff bought 8 packs of yellow chalk and 4 packs of white chalk for $7.40. On Tuesday, Mrs. Graff went to the same store and bought 6 packs of yellow and 12 packs of white chalk for $10.50. How much does each type of chalk cost? | 31. Jenny has 10 fewer quarters than dimes and five fewer nickels than quarters. The total value of the coins is $4.75. Write a system of 3 equations and solve for the number of nickels, dimes, and quarters Jenny has in her possession. |
| 32. Solve the system of 3 equations by hand ☺ $$-6x-5y+4z=53$$$$5x+3y+2z=-11$$$$8x-6y+5z=4$$ | 33. Solve the system of 3 equations by hand ☺$$a-3b+c=43$$$$3a-6b+9c=5$$$$4a-9b+10c=9$$ |